

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

FENSTER, Paul
Fenster & Company Patent
Attorneys, Ltd.
P.O. Box 10256
49002 Petach Tikva
ISRAËL

Date of mailing (day/month/year)

26 November 2001 (26.11.01)

Applicant's or agent's file reference

113/01622

IMPORTANT NOTIFICATION

International application No.

PCT/IL00/00320

International filing date (day/month/year)

04 June 2000 (04.06.00)

1. The following indications appeared on record concerning:

☒

the applicant

☒

the inventor

☐

the agent

☐

the common representative

Name and Address

SOMEKH, Gonen
Hamarganit Street 56
52584 Ramat-Gan
Israel

State of Nationality

IL

State of Residence

IL

Telephone No.

Facsimile No.

Teleprinter No.

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐

the person

☐

the name

☐

the address

☐

the nationality

☐

the residence

Name and Address

State of Nationality

State of Residence

Telephone No.

Facsimile No.

Teleprinter No.

3. Further observations, if necessary:

The person indicated in Box No. 1 has been recorded as inventor/applicant for the US only.

4. A copy of this notification has been sent to:

☒

the receiving Office

☐

the designated Offices concerned

☐

the International Searching Authority

☒

the elected Offices concerned

☐

the International Preliminary Examining Authority

☐

other:

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Elisabeth KÖNIG

Telephone No.: (41-22) 338.83.38

PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL BUREAU

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

To:

FENSTER, Paul
Fenster & Company Patent
Attorneys, Ltd.
P.O. Box 10256
49002 Petach Tikva
ISRAËL

Date of mailing (day/month/year) 26 November 2001 (26.11.01)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference 113/01622	
International application No. PCT/IL00/00320	International filing date (day/month/year) 04 June 2000 (04.06.00)

1. The following indications appeared on record concerning:

☒ the applicant

 ☐ the inventor

 ☐ the agent

 ☐ the common representative

Name and Address

INFLUENCE MEDICAL TECHNOLOGIES,
LTD.
Hasadnaot Street 3
46728 Herzliya
Israel

State of Nationality

IL

State of Residence

IL

Telephone No.

+972 (9) 970-4333

Facsimile No.

+972 (9) 970-4355

Teleprinter No.

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☒ the person

 ☐ the name

 ☐ the address

 ☐ the nationality

 ☐ the residence

Name and Address

AMERICAN MEDICAL SYSTEMS
INTERNATIONAL, INC.
10700 Bren Road West
Minnetonka, MN 55343
United States of America

State of Nationality

US

State of Residence

US

Telephone No.

Facsimile No.

Teleprinter No.

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

<input checked="" type="checkbox"/> the receiving Office	<input type="checkbox"/> the designated Offices concerned
<input type="checkbox"/> the International Searching Authority	<input checked="" type="checkbox"/> the elected Offices concerned
<input type="checkbox"/> the International Preliminary Examining Authority	<input type="checkbox"/> other:

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Elisabeth KÖNIG

Telephone No.: (41-22) 338.83.38

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
US Department of Commerce
United States Patent and Trademark
Office, PCT
2011 South Clark Place Room
CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE
in its capacity as elected Office

Date of mailing (day/month/year) 02 February 2001 (02.02.01)	
International application No. PCT/IL00/00320	Applicant's or agent's file reference 113/01622
International filing date (day/month/year) 04 June 2000 (04.06.00)	Priority date (day/month/year) 04 June 1999 (04.06.99)
Applicant HARARI, Boaz et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
03 January 2001 (03.01.01)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer A. Karkachi Telephone No.: (41-22) 338.83.38
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REC'D 11 OCT 2001

WIPO

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

14/

Applicant's or agent's file reference 113/01622	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/IL00/00320	International filing date (day/month/year) 04/06/2000	Priority date (day/month/year) 04/06/1999
International Patent Classification (IPC) or national classification and IPC A61B17/16		
Applicant INFLUENCE MEDICAL TECHNOLOGIES, LTD. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.


2. This REPORT consists of a total of 10 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 03/01/2001	Date of completion of this report 10.10.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized officer Barton, S Telephone No. +31 70 340 2717



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IL00/00320

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-38 as originally filed

Claims, No.:

1-78 as originally filed

Drawings, sheets:

1/53-53/53 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IL00/00320

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 71-73.

because:

☒ the said international application, or the said claims Nos. 71-73 relate to the following subject matter which does not require an international preliminary examination (*specify*):
see separate sheet

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the said claims Nos. 71-73.

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

☐ restricted the claims.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IL00/00320

- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☒ neither restricted nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with.
- ☐ not complied with for the following reasons:
4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:
- ☐ all parts.
- ☒ the parts relating to claims Nos. 1-26, 74-78.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	5-26,76-78
	No:	Claims	1-4,74,75
Inventive step (IS)	Yes:	Claims	5-26,76
	No:	Claims	1-4,74,75,77,78
Industrial applicability (IA)	Yes:	Claims	1-26,74-78
	No:	Claims	

2. Citations and explanations **see separate sheet**

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IL00/00320

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IL00/00320

Re Item III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

- 1 Claims 71-73 relate to a method of treatment of the human or animal body by surgery, and as such are excluded from this Report under Rule 67.1(iv) PCT.

Re Item IV

Lack of unity of invention

The International Preliminary Examination Authority is in agreement with the International Searching Authority in finding multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-26, 74-78 Curved needle bone borer with drill(s)
2. Claims: 1,27,28,30,31,34-56 Bone borer with double needles, in particular with engagement by one needle of the tip of the other
3. Claims: 57-60 Bone borer with force amplification means
4. Claims: 61,62 Bone borer with needle advance/retract safety means
5. Claims: 63-65 Detachable needle tip attached to a thread
6. Claims: 66-70 Self-aligning bone boring device

The present application lacks unity within the meaning of Rule 13 of the PCT for the following reasons.

US-A-5368596 (D1 as defined below) discloses a bone boring device with all the features of claim 1, considering the "needle base" to be that part (20,30) to which the needle (36,37) is rotatably mounted. As a result claim 1 includes no special technical features in the meaning of Rule 13.2 PCT.

As a result of the above it is apparent that the special technical features in the meaning of Rule 13.2 PCT and introduced by the remaining groups of claims are as follows:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IL00/00320

Subject 1: claims 2-26,74-78: (from claim 5 interpreted in the light of the description as a whole, and from claim 76 as dependent on claim 74): drill bit(s) adapted (channel, aperture) for use in combination with the above curved needles in order more easily to penetrate the cortical bone layer.

Subject 2: claims 27,28,30,31,34-56: (from claim 34): in a double bone penetrating needle as above, provisions for the engagement by one needle of the tip of the other, in order to provide for easier passing of a suture through the bore.

Subject 3: claims 57-60: force amplification means for more easily forcing the needle(s) through (in particular cortical) bone

Subject 4: claims 61,62: needle advance/retract means operating dependent on handle, in order to avoid error situations

Subject 5: claims 63-65 relate to a detachable needle tip attached to a thread. These claims have no features in common with or equivalent to those of independent claims 1,57,61,66,74, and therefore can have no common special technical features

Subject 6: claims 66-70: in a double tipped bone boring device known in itself, features to render the device self-aligning, in order to avoid false alignment.

Note that in establishing the above groups of claims, Claims 2-4,27-33 were considered to introduce only alternatives obvious to the skilled man or to repeat (claims 74-78) subject matter covered generally by the first subject. These claims are therefore not at present considered in themselves to define further inventive subjects.

No same or corresponding feature can be found in the above groups of claims apart from the features already known from the prior art.

There is therefore no technical relationship between the above sets of claims and the inventions defined in those sets of claims are not linked by a common general inventive concept.

Since the Applicant did not reply to the invitation to pay additional fees, the present Examination Report is restricted to the first named subject, ie to claims 1-26, 74-78.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IL00/00320

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

D1: US-A-5368596
D2: US-A-5330479
D3: US-A-5779708
D4: WO-A-9747246
D5: WO-A-9111962
D6: US-A-4312337

First Subject Only (claims 1-26,74-78)

- 1 D1 (see in particular figs 1,2; col.3/para.1) discloses a bone boring device with all the features of claim 1, considering the "needle base" to be that part (20,30) to which the needle (36,37) is rotatably mounted. As a result claim 1 lacks novelty in the meaning of Art.33(2) PCT. Note that parts 36,37 are intended for piercing a channel through bone. Since the pivot 16 can equally be described as a rotary hinge, claim 2 is deprived of novelty over the disclosure of D1.
- 1.1 D2 (see in particular figs 1,4,5) discloses a bone boring device with all the features of claim 1, considering the "needle base" to be that part (16) to which the needle (tool 22) is rotatably mounted. As a result claim 1 lacks novelty in the meaning of Art.33(2) PCT. Since the pivot 40 can equally be described as a rotary hinge, since points 47 are for direct engagement with the bone (col.3/last line), and since it is clear from a consideration of the function of the device and from figs 4,5 that the needles have a radius of curvature equal to the distance between the needles and the pivot, claims 2-4 are deprived of novelty over the disclosure of D2.
- 1.2 D3 (see in particular col.2/para.2) discloses a bone boring device with all the features of claim 74,75.

- 1.3 D4 discloses, see fig.7,8 a bone boring device whereby a curved needle is urged along a curved path through bone. The subject matter of claim 1 differs from this prior art in that a pivot is provided, as an alternative to using the (super)elastic properties of the curved needle in order to provide for a curved boring action.
- 1.4 However, D5 discloses a similar device with a similar drilling action to that of D4, but using a pivot system instead of using the (super)elastic properties of a curved needle, as a result of which the subject matter of claim 1 lacks inventive step over the disclosure of D4 when taking into account the alternative taught in D5. Since the features of claims 2-4 are similarly taught with equivalent effect in D5, also these claims lack inventive step over the disclosure of D4 when taking into account the alternative taught in D5.
- 1.5 Considering again the disclosure of D5, the use of a single or double needle or drill as the situation requires (claims 77,78) does not appear to support the attribution of an inventive step to the subject matter of these claims.
- 2 It is apparent that the addition of the features of claim 5 to those of claim 1 could result in a claim meeting the requirements of PCT regarding novelty, inventive step and industrial applicability. The scope of such a claim would be similar to that of a claim comprising the combined features of claims 74-76, which likewise meets the requirements of PCT regarding novelty, inventive step and industrial applicability.
- 2.1 Since claims 6-26 are claims dependent on claim 5, these claims also meet the requirements of the PCT with respect to novelty and inventive step.

Re Item VII

Certain defects in the international application

- 1 The independent claims are not in the two-part form in accordance with Rule 6.3(b) PCT.
- 2 The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

- 3 The term "CurveTek" employed at p.1/l.25 has no precise meaning as it is not internationally accepted as a standard descriptive term, thereby rendering its subject matter unclear (Article 6 PCT) unless identified as a registered trade mark.

Re Item VIII

Certain observations on the international application

- 1 It is noted that the word "therethrough" in claim 5 would grammatically indicate a channel formed through the bone rather than, as clearly intended in the light of the description as a whole, to a channel formed through the drill bit.
- 1.1 It is further apparent in the light of the description as a whole that the aperture be a lateral aperture.
- 2 The second paragraph on page 38 of the description implies that the subject matter for which protection is sought may be different from that defined by the claims, thereby resulting in lack of clarity (Article 6 PCT) when used to interpret them (see also the PCT Guidelines, III-4.3a).
- 3 The plurality of independent claims related to the first above mentioned inventive subject makes it unnecessarily difficult to determine the matter for which protection is sought, and places an undue burden on others seeking to establish the extent of the protection, contrary to Article 6 PCT.
- 3.1 This inventive subject would be appropriately defined in terms of a single independent claim followed by dependent claims covering features which are merely optional (Rule 6.4 PCT).

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
14 December 2000 (14.12.2000)

PCT

(10) International Publication Number
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(51) International Patent Classification⁷: **A61B 17/16**

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(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:
130307 **4 June 1999 (04.06.1999) IL**
09/476,682 **30 December 1999 (30.12.1999) US**
135832 **27 April 2000 (27.04.2000) IL**

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:
US **09/476,682 (CIP)**
Filed on **30 December 1999 (30.12.1999)**

(71) Applicants (for all designated States except US): **INFLUENCE MEDICAL TECHNOLOGIES, LTD. [IL/IL];**

Hasadnaot Street 3, 46728 Herzliya (IL). **SOMEKH, Gonen [IL/IL];** Hamarganit Street 56, 52584 Ramat-Gan (IL).

(72) Inventors; and

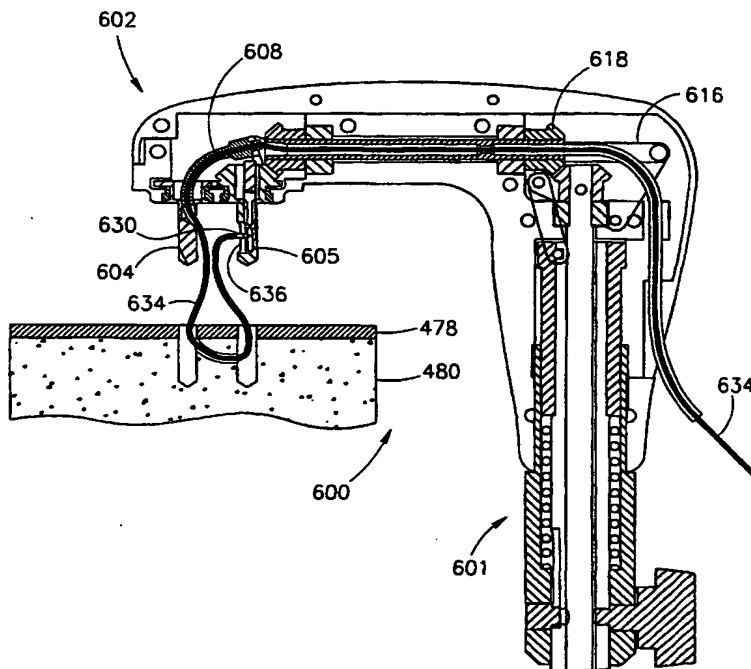
(75) Inventors/Applicants (for US only): **HARARI, Boaz [IL/IL];** Abba-Hushi Avenue 135, 34987 Haifa (IL). **BEYAR, Mordechai [IL/IL];** Haeshkolit Street 7, 30600 Caesarea (IL). **GLOBERMAN, Oren [IL/IL];** Derech Haganim Street 30, 46910 Kfar-Shmaryahu (IL).

(74) Agents: **FENSTER, Paul et al.; Fenster & Company Patent Attorneys, Ltd., P.O. Box 10256, 49002 Petach Tikva (IL).**

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

[Continued on next page]

(54) Title: **BONE SUTURING DEVICE**



(57) Abstract: A bone boring device, comprising a needle base, a pivot, at least one curved needle having a tip at one end thereof and rotatably mounted on the needle base, said needle and pivot arranged and adapted so that when said tip is placed against bone tissue and said needle is rotated around said pivot, said needle is urged into said bone. Optionally, the at least one needle comprises at least two needles.

WO 00/74578 A3



(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:
12 July 2001

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *With international search report.*

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IL 00/00320

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61B17/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 368 596 A (BURKHART) 29 November 1994 (1994-11-29) figures 1,2,4; table 1	1,2, 57-60
X	US 5 330 479 A (WHITMORE) 19 July 1994 (1994-07-19) figures 3,4	1-3
X	US 5 779 708 A (CYBERDENT) 14 July 1998 (1998-07-14) abstract	74,75
Y	WO 97 47246 A (INFLUENCE) 18 December 1997 (1997-12-18) cited in the application page 12, last paragraph -page 13, paragraph 1; figures 3,4 -/--	1-4,55, 56,74, 75,77,78

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- *Z* document member of the same patent family

Date of the actual completion of the international search

29 January 2001

Date of mailing of the international search report

07.02.2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

Barton, S

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IL 00/00320

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 91 11962 A (ROMANO) 22 August 1991 (1991-08-22)	1-4, 55, 56, 74, 75, 77, 78
A	figure 1	5, 66, 67, 69
A	US 5 250 055 A (MOORE) 5 October 1993 (1993-10-05) figures 1-8	5
X	US 4 312 337 A (DONOHUE) 26 January 1982 (1982-01-26)	1, 2, 4, 27, 28, 30, 31, 34, 35, 37-39, 45, 48, 52, 55, 56
X	column 2, paragraph 2; figure 2 US 4 935 027 A (YOUNG) 19 June 1990 (1990-06-19) figures 1-10, 14B	1, 7, 27, 29-37, 45, 55
A	US 5 509 918 A (ROMANO) 23 April 1996 (1996-04-23) the whole document	29, 55, 56
X	US 5 578 032 A (LALONDE) 26 November 1996 (1996-11-26) figure 1	57, 58, 60
A	DE 38 02 033 C (APPEL) 22 June 1989 (1989-06-22) column 4, paragraph 3 - paragraph 5	61, 62
X	EP 0 478 949 A (USSC) 8 April 1992 (1992-04-08) figures 11, 12	63-65
X	US 5 527 342 A (PIETRZAK) 18 June 1996 (1996-06-18) figures 2, 13	63
X	US 5 312 403 A (FRIGG) 17 May 1994 (1994-05-17) figures 1, 4	66, 68

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL 00/00320

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 71-73
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-26, 74-78

Curved needle bone borer with drill(s)

2. Claims: 1,17-56

Bone borer with double needles, in particular with engagement by one needle of the tip of the other

3. Claims: 57-60

Bone borer with force amplification means

4. Claims: 61,62

Bone borer with needle advance/retract safety means

5. Claims: 63-65

Detachable needle tip attached to a thread

6. Claims: 66-70

Self-aligning bone boring device

INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No

PCT/IL 00/00320

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5368596	A	29-11-1994	NONE	
US 5330479	A	19-07-1994	NONE	
US 5779708	A	14-07-1998	AU 3126797 A EP 0928163 A WO 9806337 A	06-03-1998 14-07-1999 19-02-1998
WO 9747246	A	18-12-1997	AU 2975797 A	07-01-1998
WO 9111962	A	22-08-1991	US 5002546 A AT 185056 T AU 7334591 A DE 69131663 D DE 69131663 T DK 513228 T EP 0513228 A ES 2139575 T GR 3032273 T	26-03-1991 15-10-1999 03-09-1991 04-11-1999 06-04-2000 03-01-2000 19-11-1992 16-02-2000 27-04-2000
US 5250055	A	05-10-1993	US 5637112 A US RE36020 E US 5961530 A	10-06-1997 29-12-1998 05-10-1999
US 4312337	A	26-01-1982	NONE	
US 4935027	A	19-06-1990	CA 2042596 A WO 9102490 A	22-02-1991 07-03-1991
US 5509918	A	23-04-1996	AU 719872 B AU 5719199 A AU 712452 B AU 6482798 A AU 686630 B AU 6825994 A BR 9406370 A CN 1122567 A EP 0700273 A JP 8509918 T WO 9426177 A US 5700265 A	18-05-2000 06-01-2000 04-11-1999 09-07-1998 12-02-1998 12-12-1994 13-02-1996 15-05-1996 13-03-1996 22-10-1996 24-11-1994 23-12-1997
US 5578032	A	26-11-1996	DE 19506564 A	04-07-1996
DE 3802033	C	22-06-1989	WO 8906516 A EP 0354943 A US 5108400 A	27-07-1989 21-02-1990 28-04-1992
EP 478949	A	08-04-1992	US 5368595 A CA 2049103 A,C CA 2178970 A,C DE 69124900 D DE 69124900 T ES 2098288 T US 5382257 A	29-11-1994 07-03-1992 07-03-1992 10-04-1997 24-07-1997 01-05-1997 17-01-1995
US 5527342	A	18-06-1996	AT 179059 T AU 1371995 A	15-05-1999 03-07-1995

INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No

PCT/IL 00/00320

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5527342	A	DE 69418033 D	27-05-1999
		DE 69418033 T	12-08-1999
		EP 0688186 A	27-12-1995
		ES 2130580 T	01-07-1999
		WO 9516399 A	22-06-1995
US 5312403	A	17-05-1994	NONE



patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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